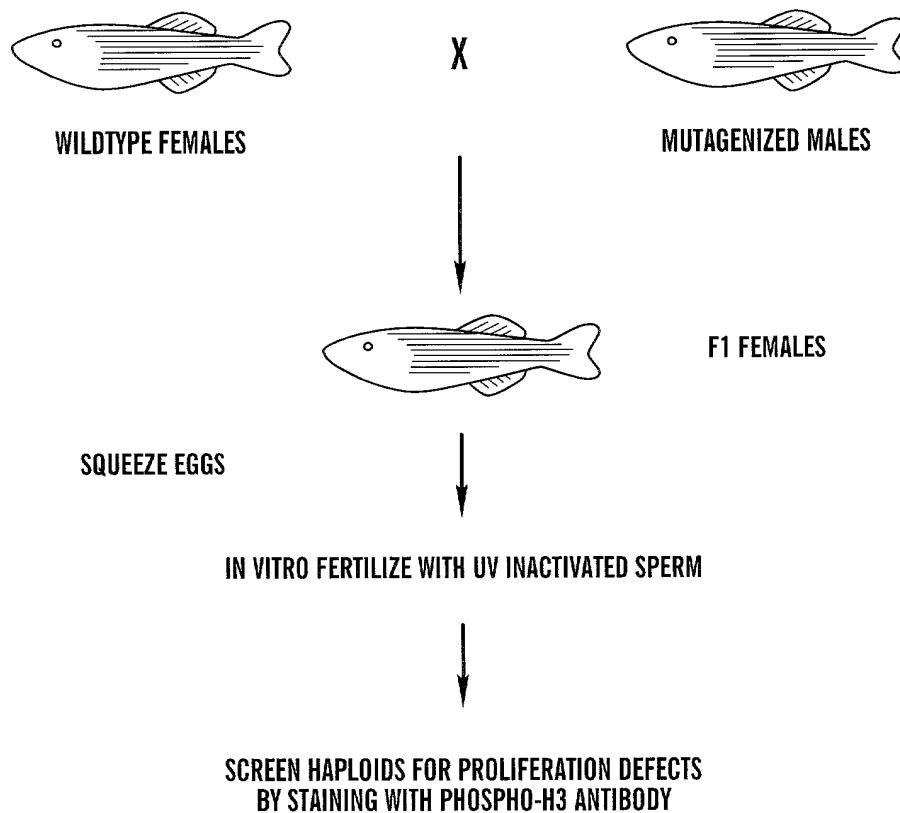


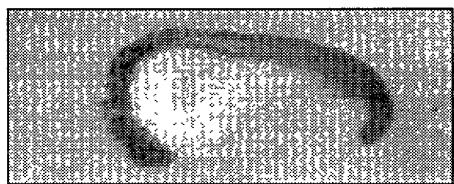
1/29

**FIG. 1**



12 HPF

FIG. 2A



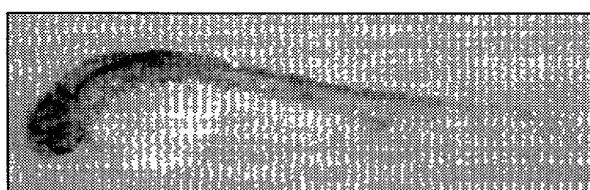
16 HPF

FIG. 2B



24 HPF

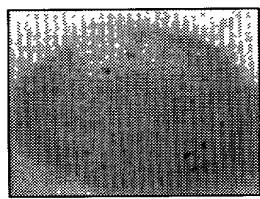
FIG. 2C



48 HPF

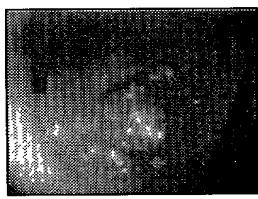
FIG. 2D

3/29



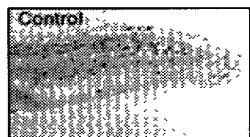
H3 ANTIBODY 24 HPF

FIG. 3A



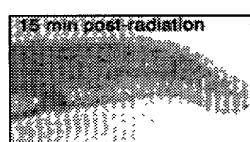
ACRIDINE ORANGE 24 HPF

FIG. 3B



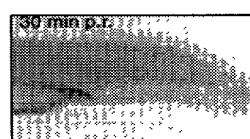
CONTROL

FIG. 4A



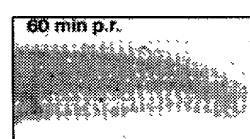
15 MIN POST-RADIATION

FIG. 4B



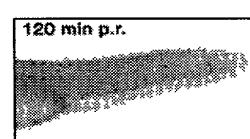
30 MIN POST-RADIATION

FIG. 4C



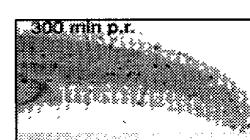
60 MIN POST-RADIATION

FIG. 4D



120 MIN POST-RADIATION

FIG. 4E



300 MIN POST-RADIATION

FIG. 4F

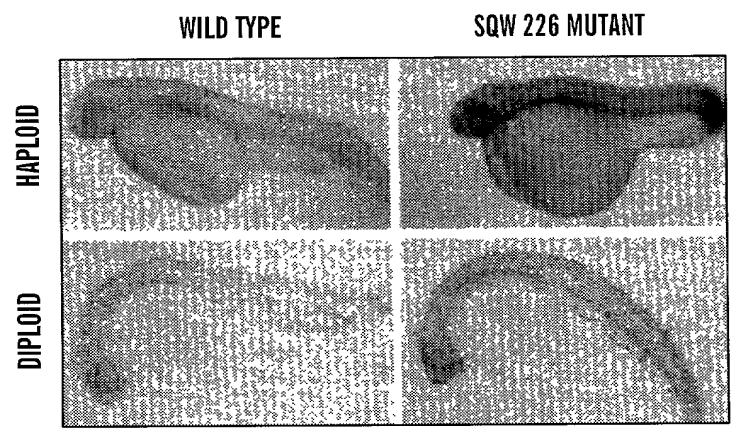


FIG. 5A

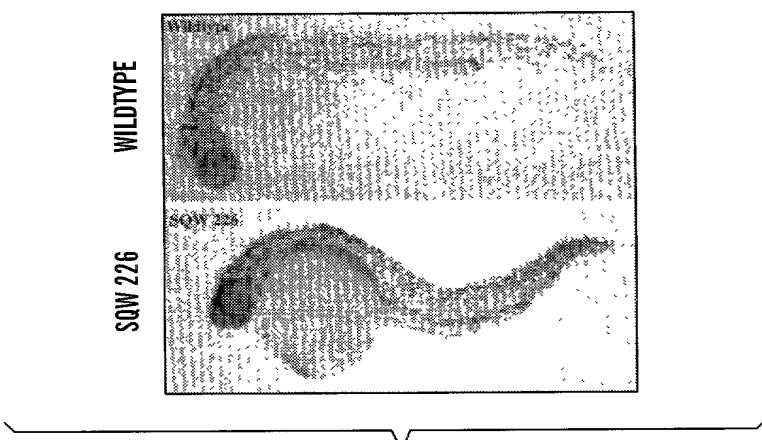


FIG. 5B

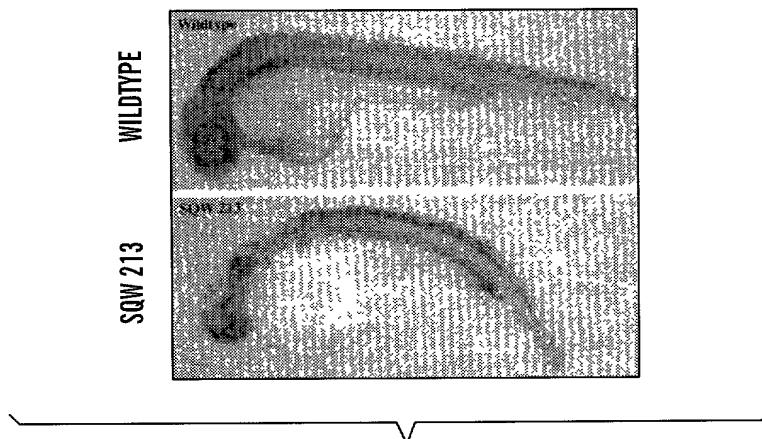


FIG. 5C

6/29

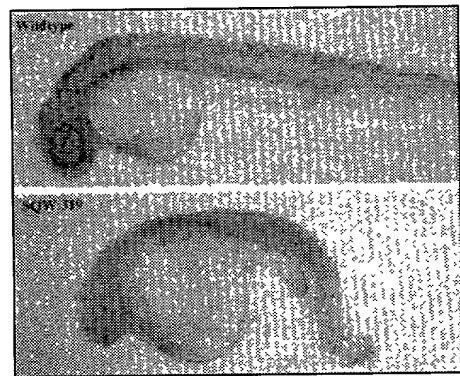


FIG. 5D

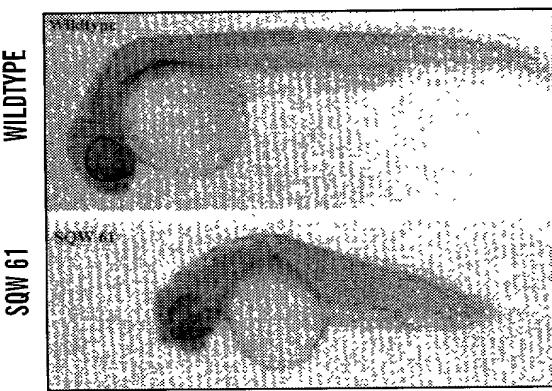


FIG. 5E

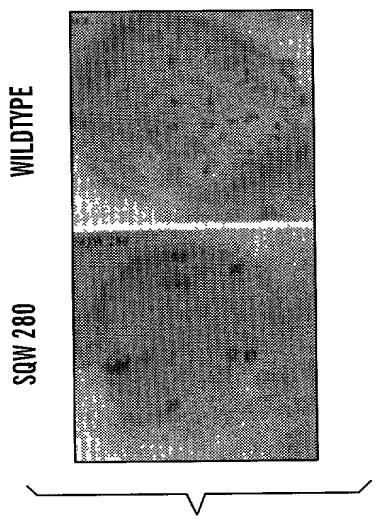
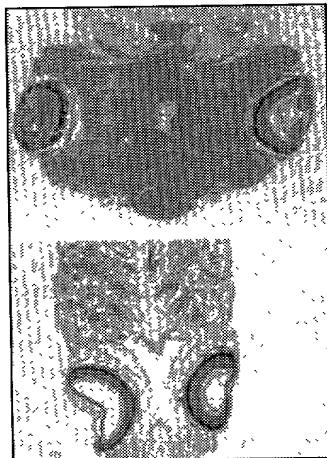


FIG. 5F

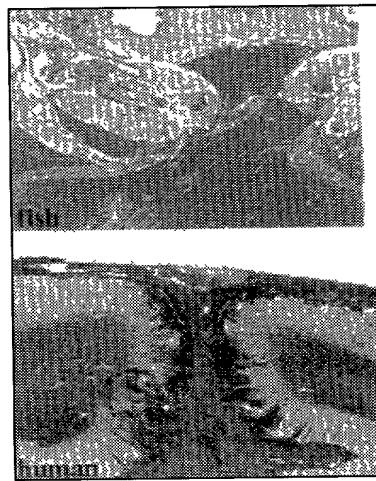


{

FIG. 6A

ZEBRAFISH

HUMAN



{

FIG. 6B

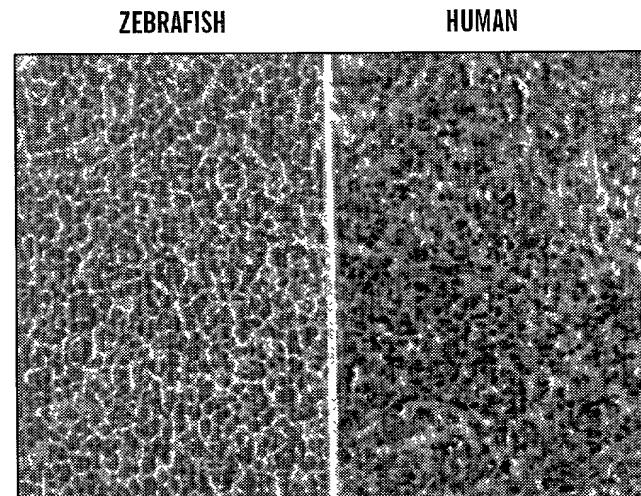


FIG. 6C



FIG. 6D

9/29

TISSUE ENGINEERING

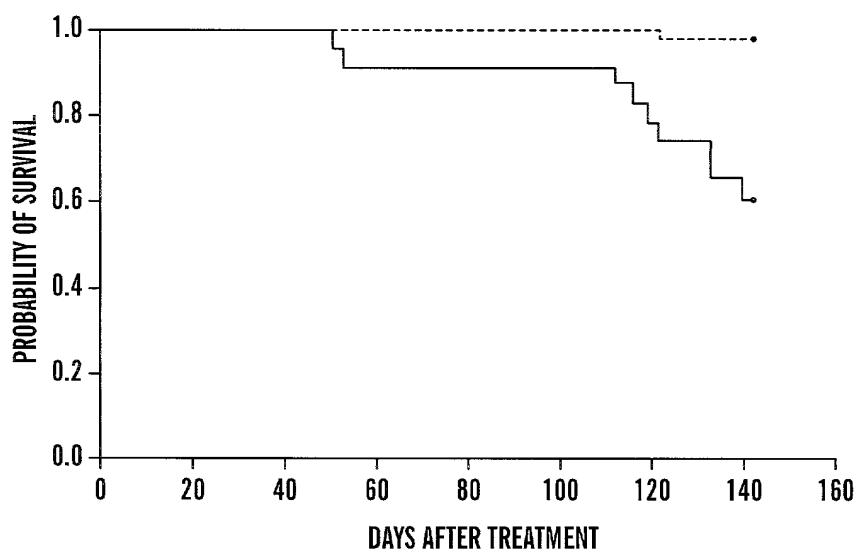
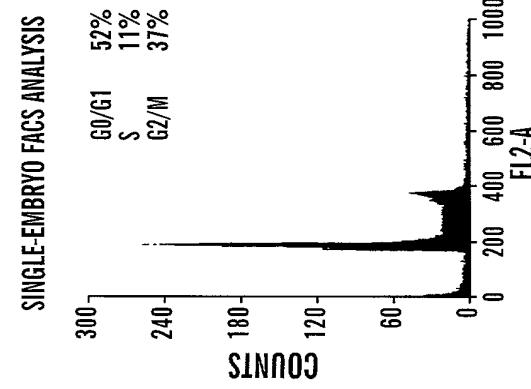
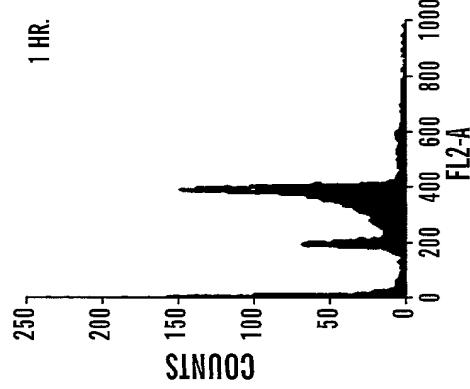


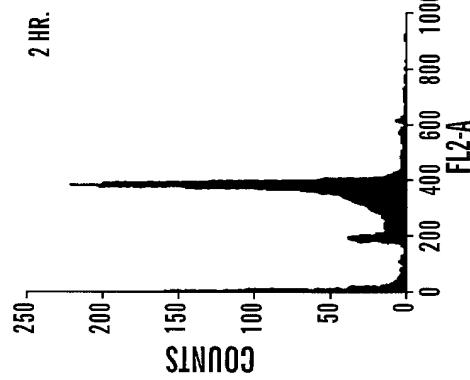
FIG. 6E

**FIG. 7A**

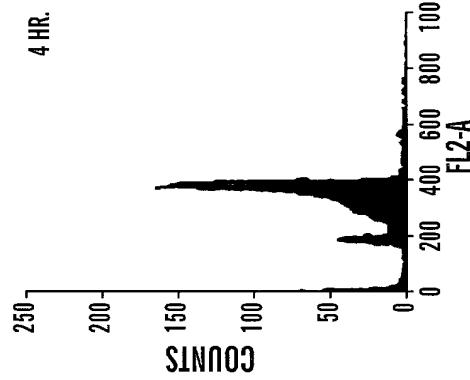
FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

**FIG. 7D**

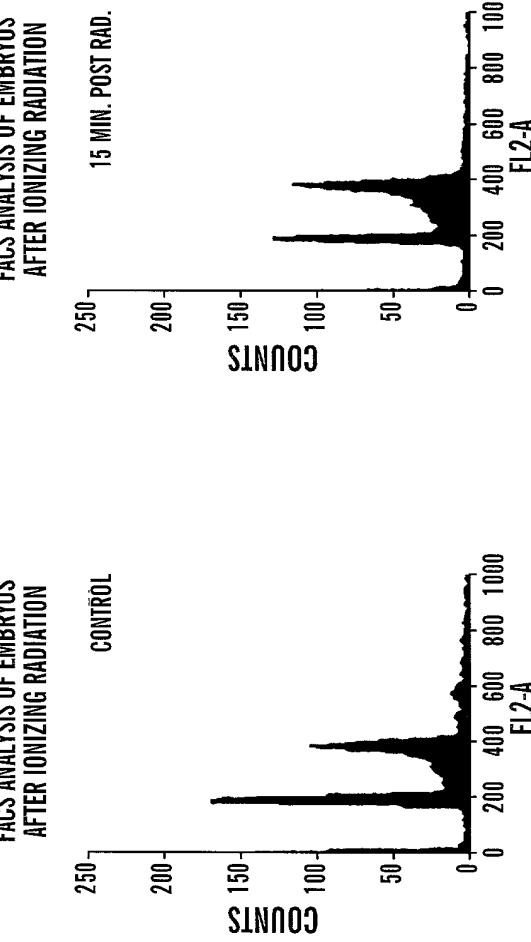
FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

**FIG. 7E**

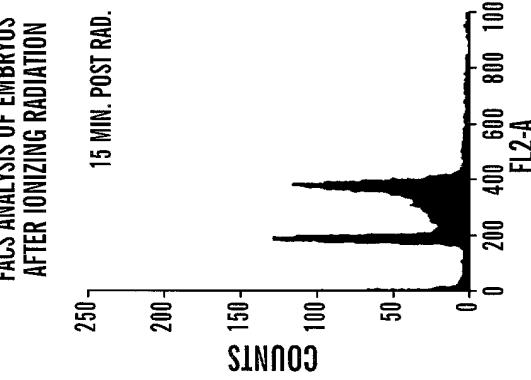
FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

**FIG. 7F**

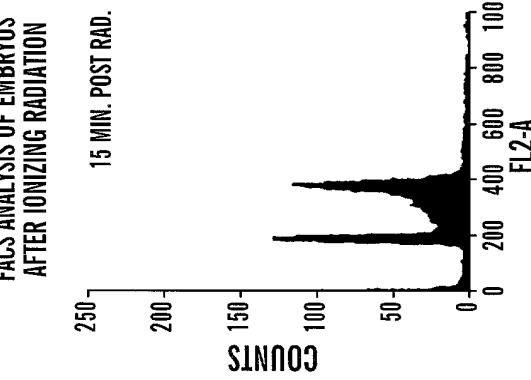
FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION



FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

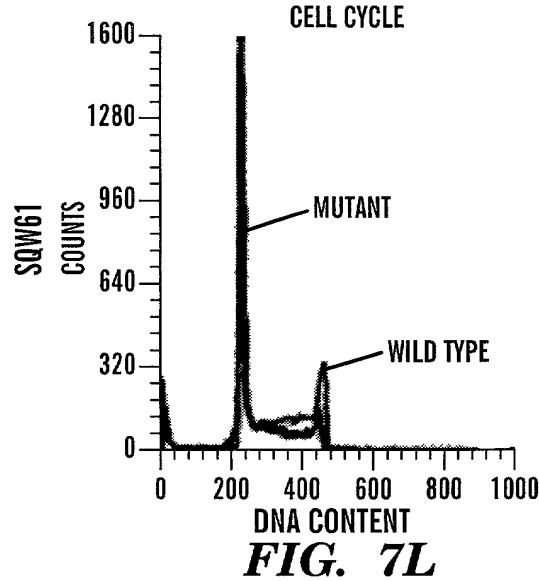
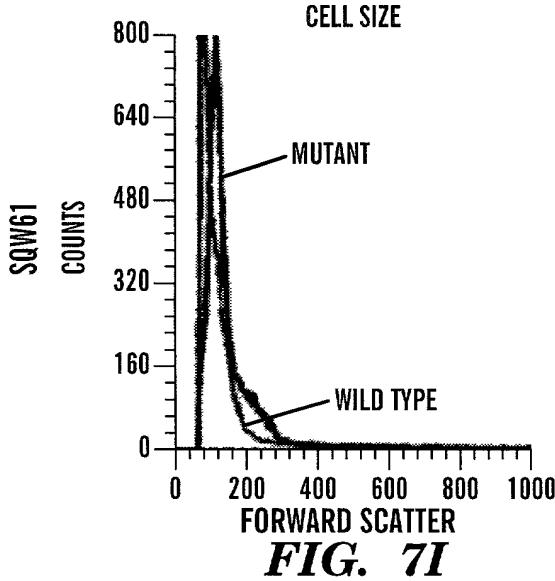
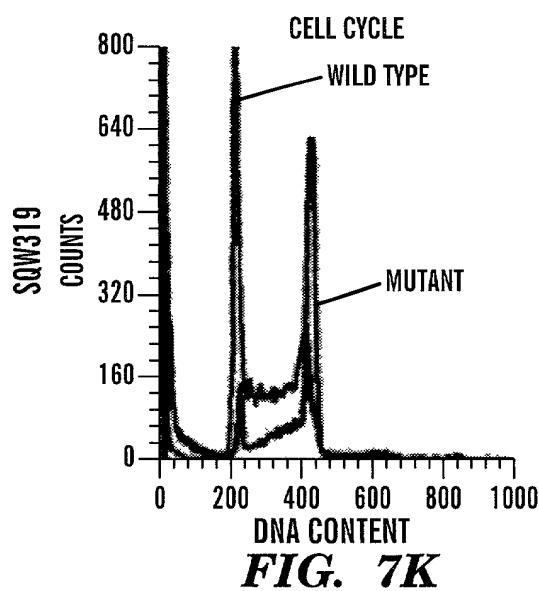
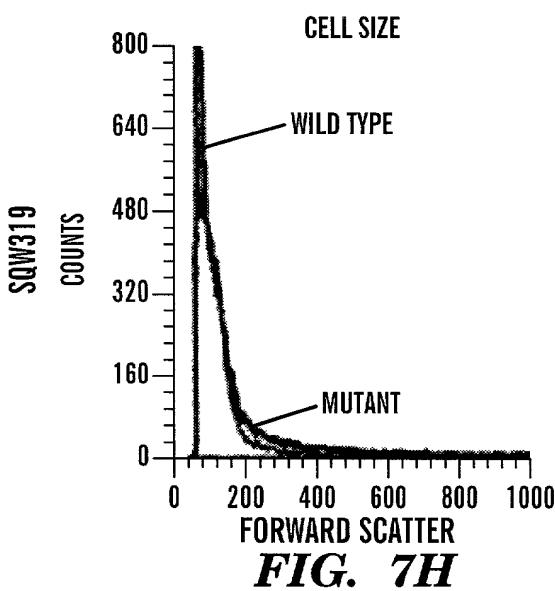
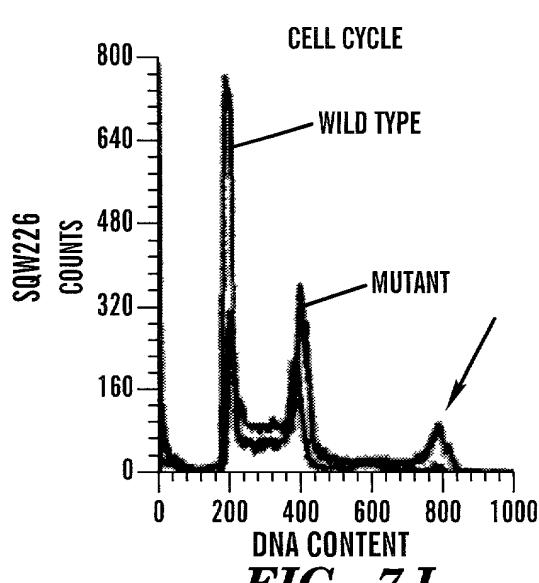
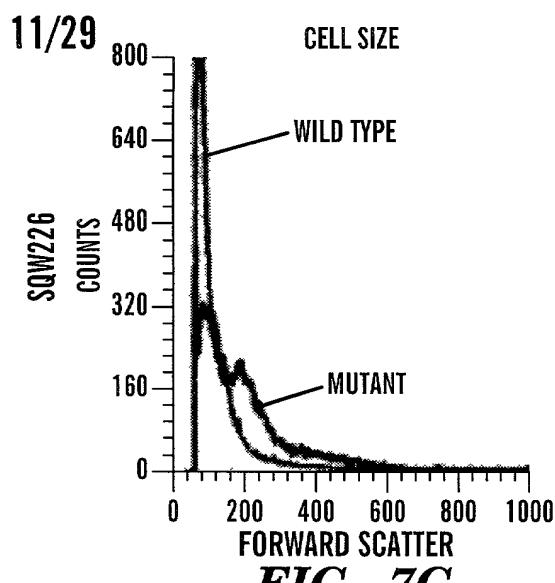
FIG. 7C

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

FIG. 7B

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

FIG. 7A



12/29

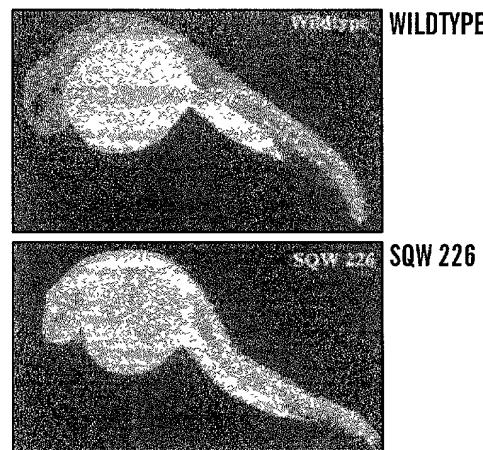


FIG. 8A

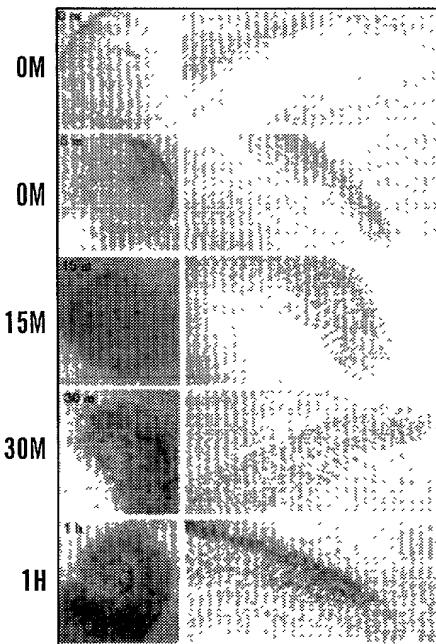


FIG. 8B

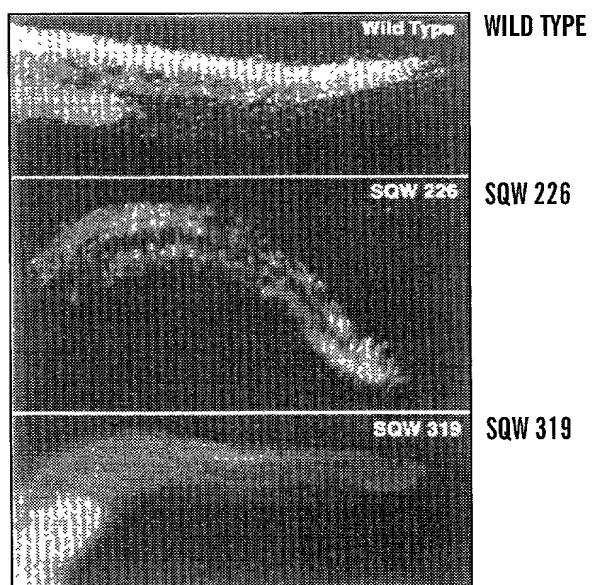


FIG. 8C

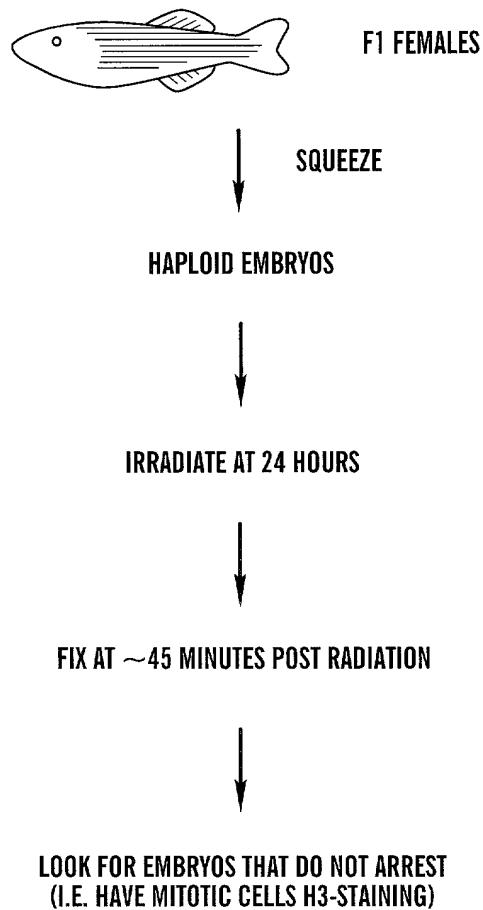
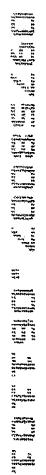


FIG. 9

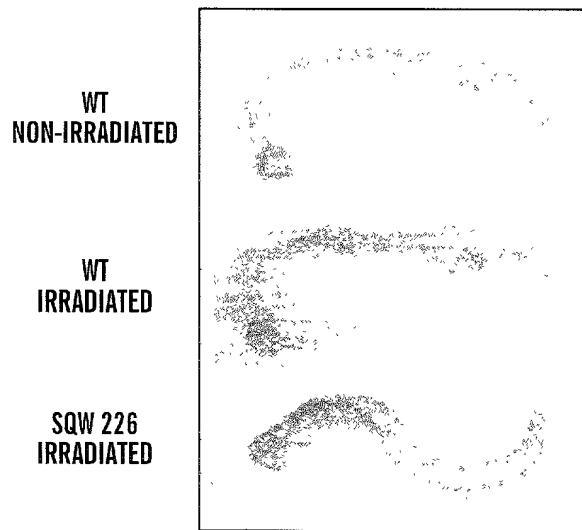


FIG. 10

Zfish HPPK--KRSSGTPOKKELKGLKSRSPDSGDN-----AVLSPERHKDKDPEFVFLSEEQSTNSICDHAWRIMR 68
 Frog HPPKSPRK---QQIRSQGEPRSPDRP-----DFQDPOFNFUCENKISONVRGKAWNTYBK 53
 Human HPPKTPRKTAATAAAAAEPPAPPPPPPPEEDPEQDSGPEDLPLVRLFEETEEPDFTALCQKLKIPDHVRERAWLTBK 80

Zfish EIRSMDK-TNMPYSNRQWQACLFIAGMELEGINLTFTQFLKAVGLSVKQFISLVRKMFVNVDTISPKVNSAVTRLENK 147
 Frog MFPSGYMMRE-TAKKESLGLCLYIASVDCCEMTFTFTELLKILRLSVNRCFRULREMNTINMDVLSNKVDNAISKLKKY 132
 Human VSSVDGVLGYYIQKKKELWGTICIFIAAVDLEMSFTFTLQXNIEISVHKFFNLKEIST----STKVDNAMSPLLKY 155

Zfish DVTLALYQRFVKTCEKTFAEPDNA-----KRKELWESSATMFLLAQKTFQYEDDLVISFQQLLCLVLEFRAKRLSPSL 220
 Frog ENMCLLFQKFQRTFELFEEQHNT--RAAVDTAPILKGTFTFLLARGKILQMDDELVISSQQLLCVLDYFIKLSPPSI 209
 Human DVLFALFSKLERTCFYLTPSS-SISTEINSALVLKVSLTFLLAKEVGLVOMEDDLVISFQLMLCVLDYFIKLSPPMI 234

Zfish QSPYNSVVSSSTLSPPTTSRPNQGKSPR--PAEMDMQMLLETLCGEQDCSVDEVKVNQSTFCALDSVCLLGLQGLP 298
 Frog KEPYKSAALNGLPVNTPPPSRRSQRNTRVSPQSETDSKVLFQLCSQNYCPMDEVRNVYSTSFVDFLASACISSNECIP 289
 Human KEPYKTAV--IPINGSRTPRPGQNRSAARIAKQLENDTRIIEVLCHEHECNIDEVKVNQYFKNFIPPMNSLCLVTSNGLP 312

Zfish PMEALKSYEELYHNSKDFDARLFLSDETLSPIKIEVSKVEVTPRKMLFAEDIAIPVPTPIRAAATSIQQLRGQLTSG 378
 Frog KVESISRQEELYHNSKDFDARLFLSDETLKVDVQDSLDERTPRKD--ESEVFVPVPSQTPVFGAATVQQLMVTLSA 367
 Human EVENLSKRYEEIYHNSKDFDARLFLDHEKTLQTDSDSFTQTPRKSNLDEEVNVIPSPHTPVPTVMTIQQLMMLNSA 392

Zfish SDQPSNNLWYYKNCTVDPGEGIKRVEELGEVFIQRFQAVGQHREGLGRKHFYLQALYYKVNEMSLKSEEBPLSVQ 458
 Frog NDKPPDTLDSYFSNCTVNPKTKitDRIEHFGHVFKEKFASSVGQACAEIGYQSYKLGVLYYRVMEAIIKTEEBPLSVH 447
 Human SDQPSENLISYFNNCTVNPKESILKRVKDIQYIEKEKFAKAVGQGCVETCSQSYKLGVLYYRVMESMLKSEEBPLS 472

Zfish FSKLLNNAAFTSLLACALEEVIAATVGSNLKNGGFGRSSGASDSVESDLCFPWILSVFQLPAFDFYKVIESFIKAEPIL 538
 Frog FSKLLNNNDIFHICLLACAVEVVWASYARNA-----SQAYC-SGGTNTLSFPWILRafeIKAfDFYKVIESFIKAEPIL 518
 Human FSKLLNNNDIFHMSLLACALEEVVWATYSRST-----SQN--LDSGTDLSPFWILNVNLKAfDFYKVIESFIKAEPGL 542

Zfish KHDWVKHLECEHVIWESLAWRADSPLFDLKQSR-ECPGEQAEPPATLQFLHHNHTAADLQLSPVPCQ----- 610
 Frog TSNMVKYLERCEHQIMECLAWQSDSPFLDLIKOTRERECLVDHPELVSNLQCPVQHNHTAADLQLSPSRSSHQHPVTSV 598
 Human TREMVKYLERCEHRIWESLAWLSDSPFLDLIKQSKDRECPDHLESACPLNLPQLNNHTAADLQLSPVSPKKGSTTRV 622

Zfish --P-PVMEAEPPTP--GTRAPRSNSLSLFYKKLYRMAYLRLKMLFSNLITSHPEMEPIIWTLLQHTLQNEYELMRDRHLD 685
 Frog TSSVTNGQVSSSQPVQ---QKSTLSLFYKKVYLLAYKRLSSLCSLSSDHPPELEQVIWTLLQHTLQNEYELMRDRHLD 674
 Human NST-ANAETQATSAFQTQPLKSTLSLFYKKVYRLAYLRLNTLCEPRLSHEPELEHIIWTLQHTLQNEYELMRDRHLD 701

Zfish QIMMSAMYATCKVKMVLRFKLTIVTAYKELPNTQETFKRVLIREGQYDSIIVFYNLVMQKLKTNILQYSSPRPPPLSP 765
 Frog QIMMCSMYCICKAKNIDLRFKLTIVTAYKLTNTQETFKRVLIRDQHDSIIVFYNLVMQKLKSHILQYCSARHPTLSP 754
 Human QIMMCSMYCICKVKMVLRFKLTIVTAYKLPHAVQETFKRVLKEEYDSIIVFYNLVMQRLKTNILQYASTRPPPLSP 781

Zfish IPIHIPSPYK--NSPLRVPGSNNVYVSPKSSRV-----SPLVMTPRSRLIISIGESFGSADKFQKINQWVSSSDWSLK 837
 Frog IPIHIPSPYRPGNSP-KVPG--NIYVSPKTPYKTAQDGLLSPSKMTAKTSFLISLGETFRSPDRFQKINQWLNSCERPIK 831
 Human IPIHIPSPYKFPSSPLRIPCGN-IYISPLKSPYKISEGLPTPTKMTPRSRLIISIGESFGTSEKFQKINQWVNSDRVVLK 860

Zfish RSLDGGSAPKPLKRLRFMDGQDEADGSKS-SGESALIQLKLEMSTSTRSRMCEQKLKEESDKDHPEP. SEQ ID NO: 1 904
 Frog RSAADTGTTPKPLKQLRFDSGQDEADGSKHIOGESKFOQKLAEMTSTRTRMOKQKLEESLESSQCEEK SEQ ID NO: 2 899
 Human RSAEGSNPPKPLKQLRFDIEGSDEADGSKHLPGESKFOQKLAEMTSTRTRMOKQKMDTSNKEEK SEQ ID NO: 3 928

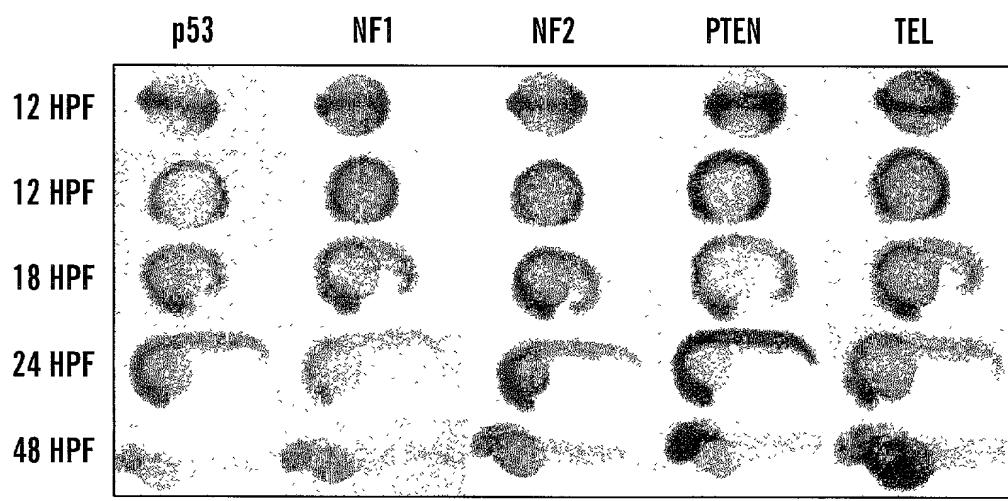


FIG. 12

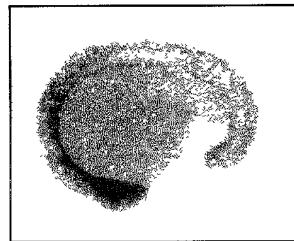


FIG. 13A

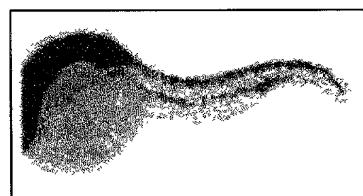


FIG. 13B

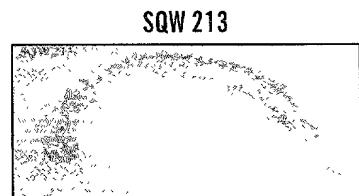


FIG. 13C

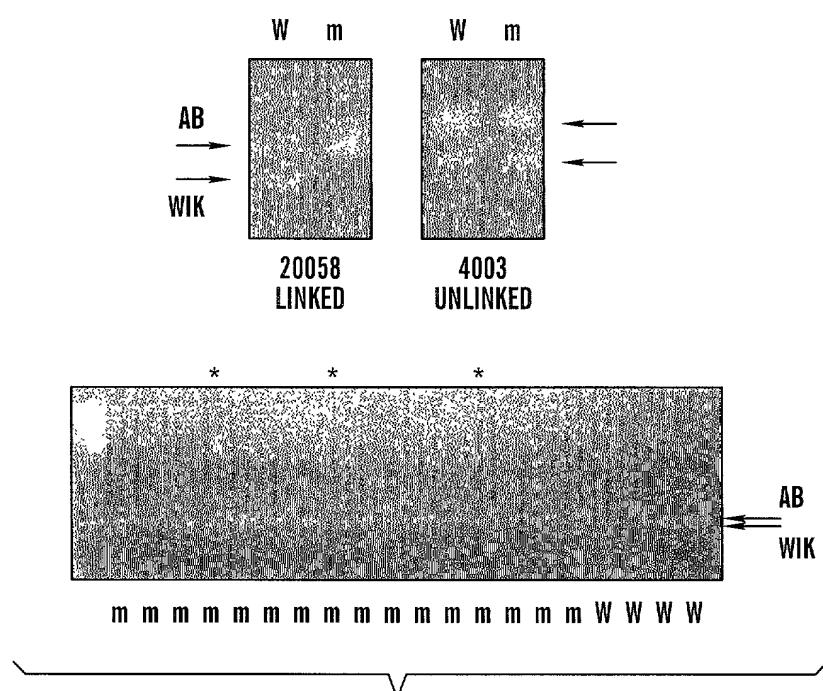


FIG. 14

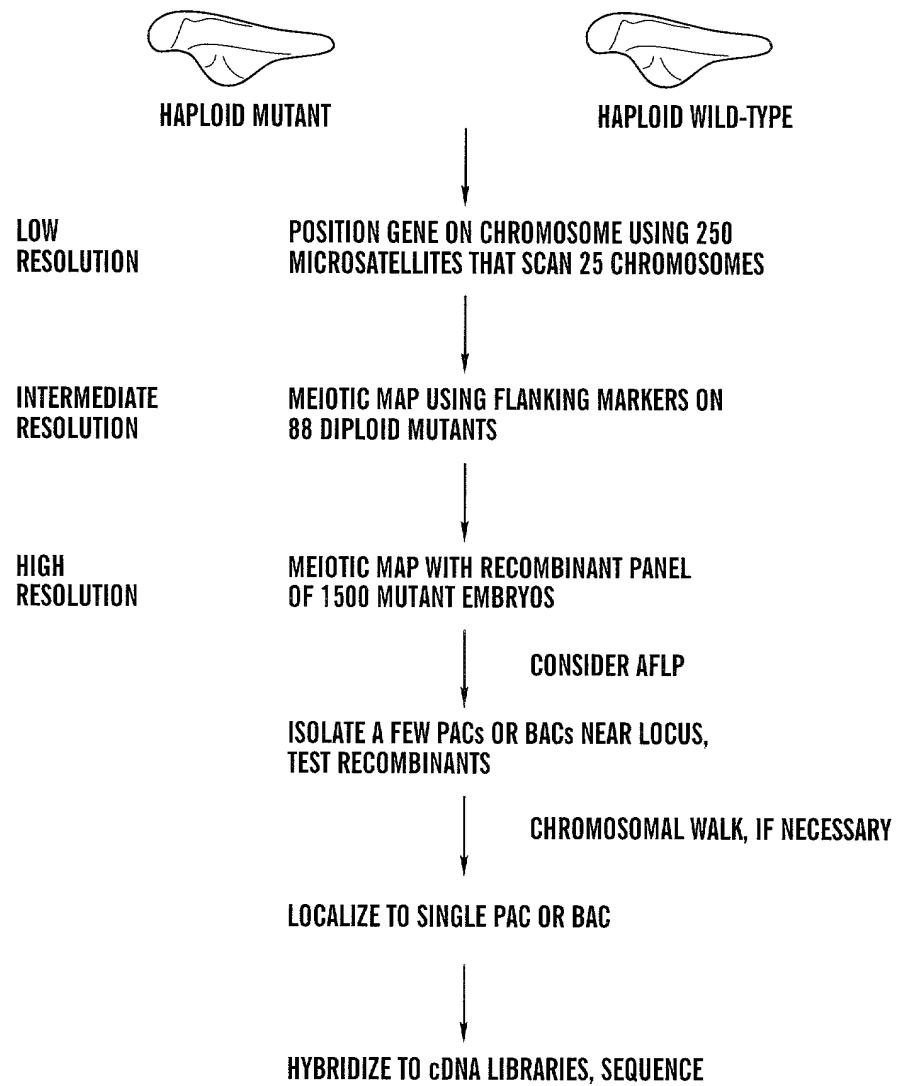
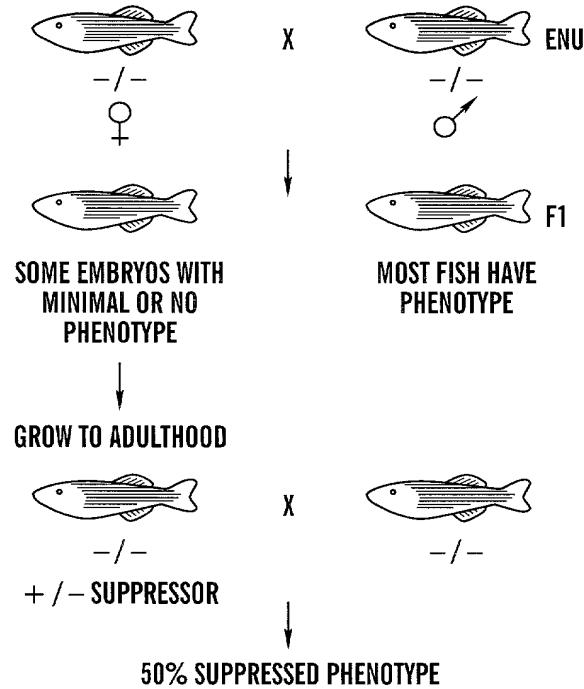
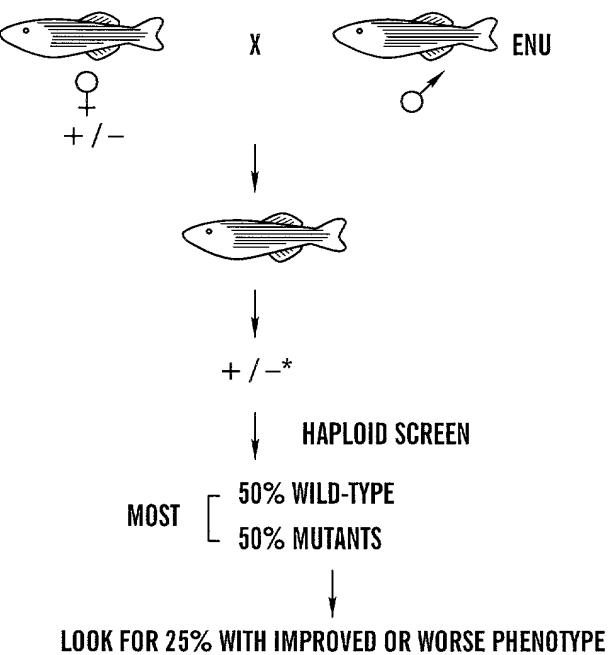


FIG. 15

**FIG. 16A****FIG. 16B**

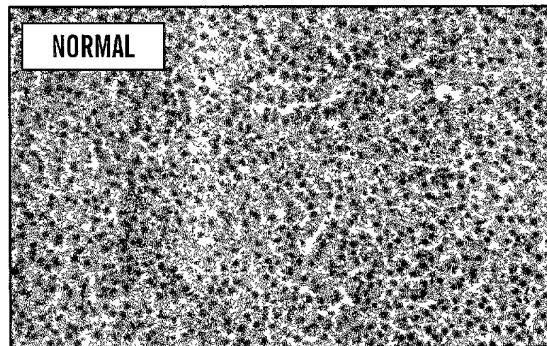


FIG. 17A

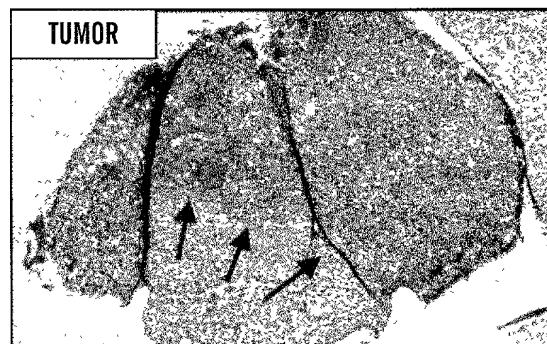


FIG. 17B

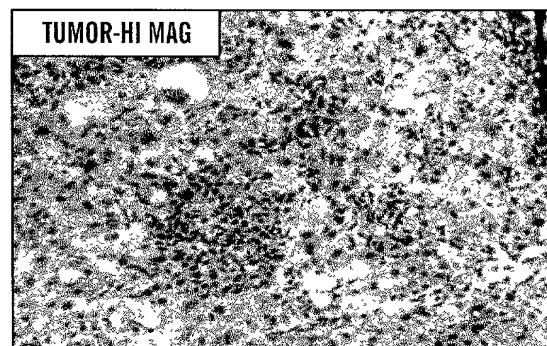


FIG. 17C

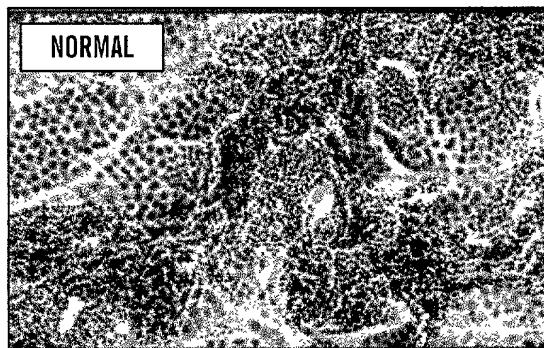


FIG. 18A

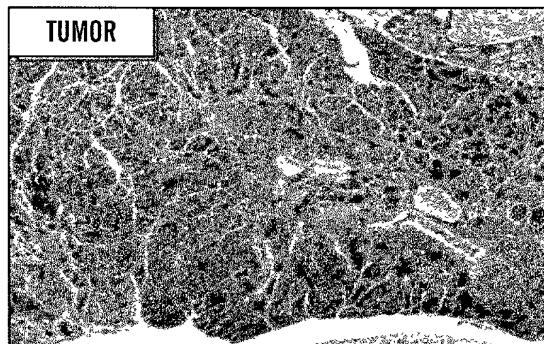


FIG. 18B

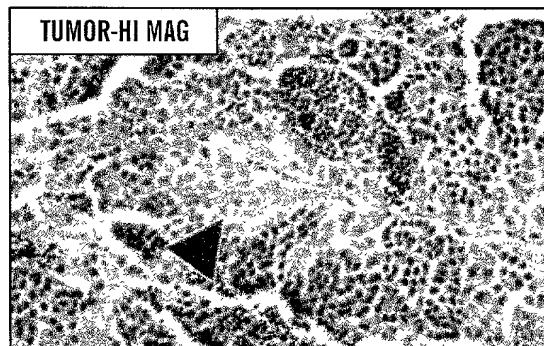


FIG. 18C

24/29

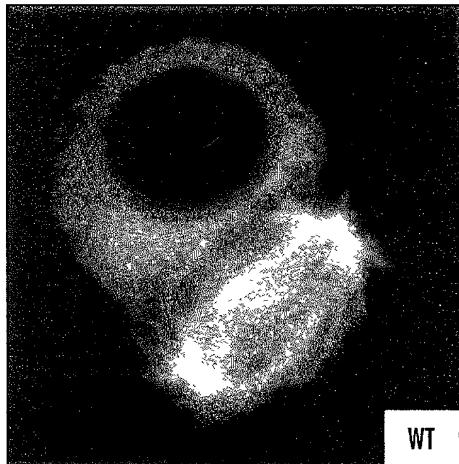


FIG. 19A

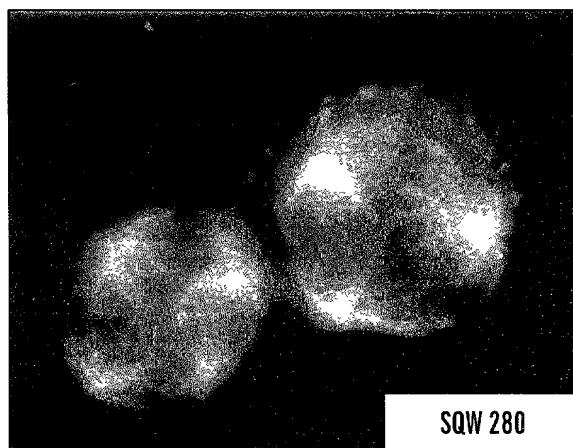


FIG. 19B

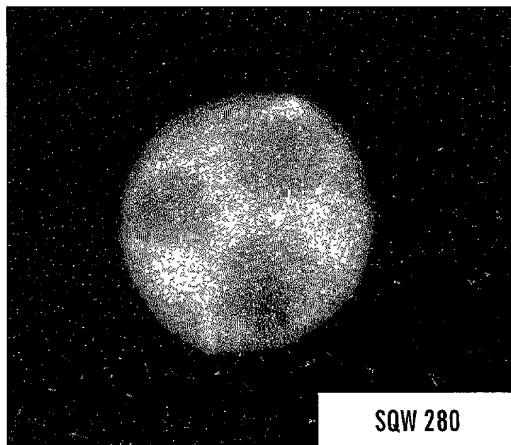


FIG. 19C

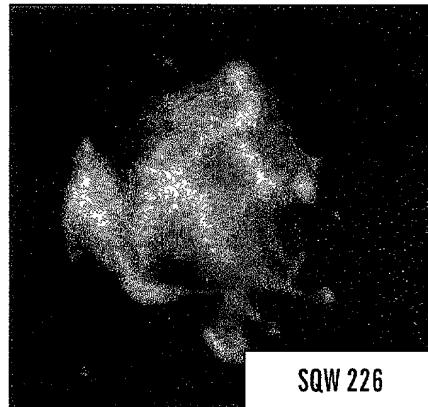


FIG. 19D

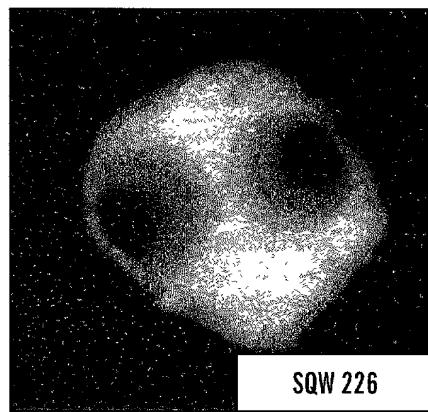


FIG. 19E

26/29

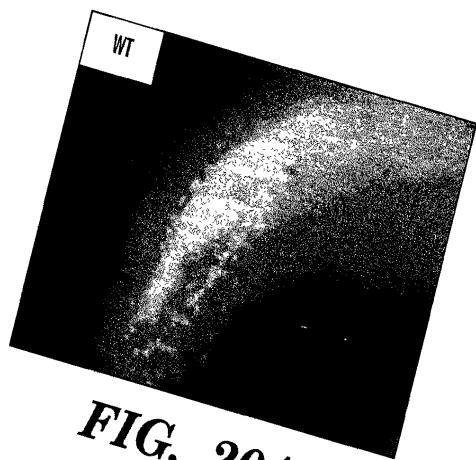


FIG. 20A

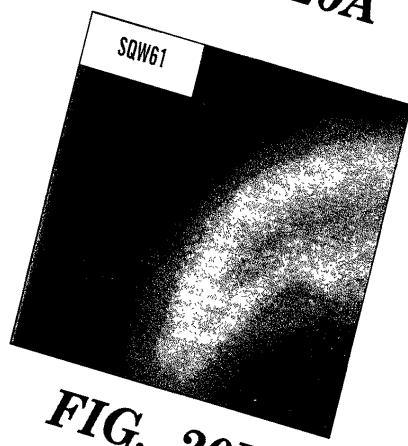


FIG. 20B

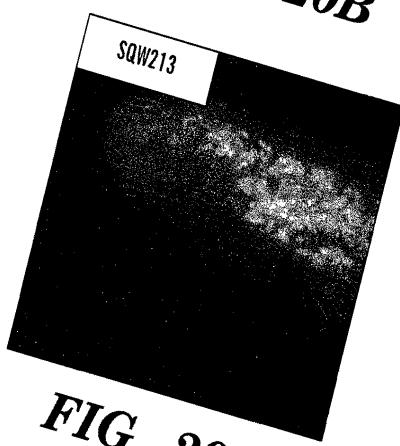


FIG. 20C

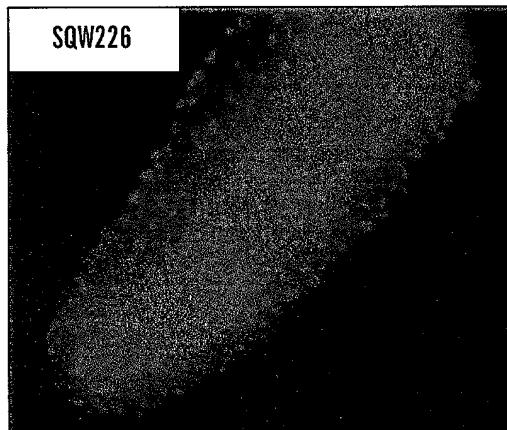


FIG. 20D

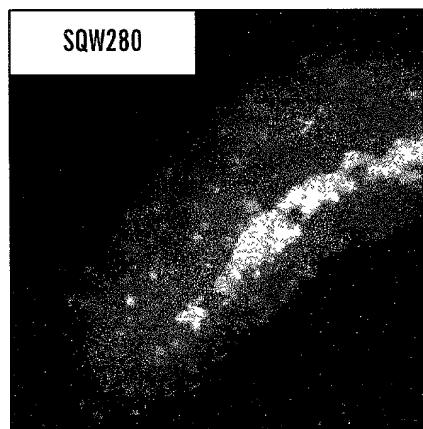


FIG. 20E

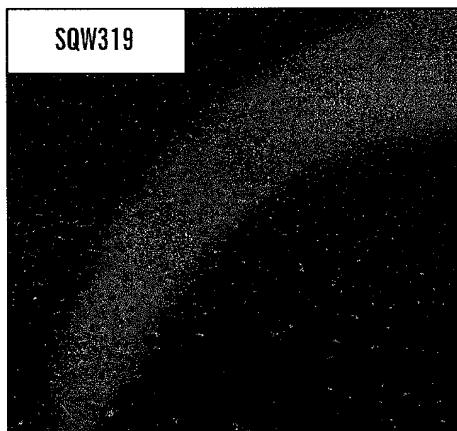


FIG. 20F

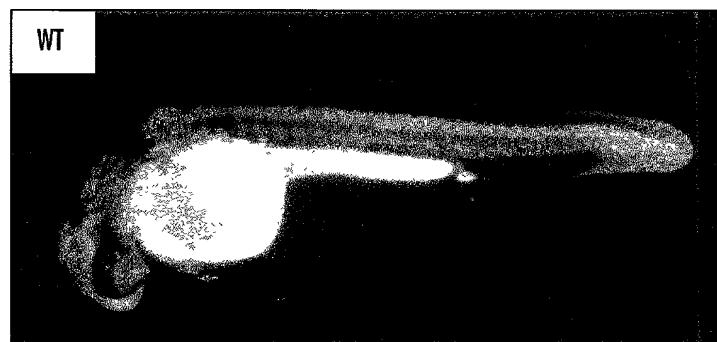


FIG. 21A

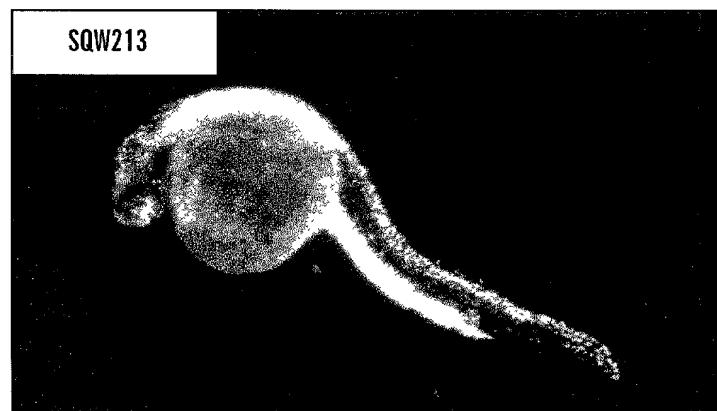


FIG. 21B

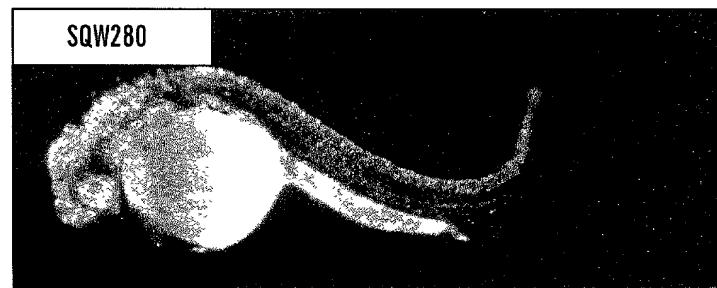


FIG. 21C

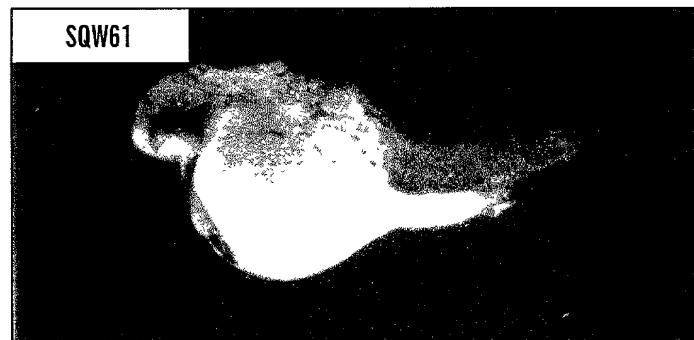


FIG. 21D

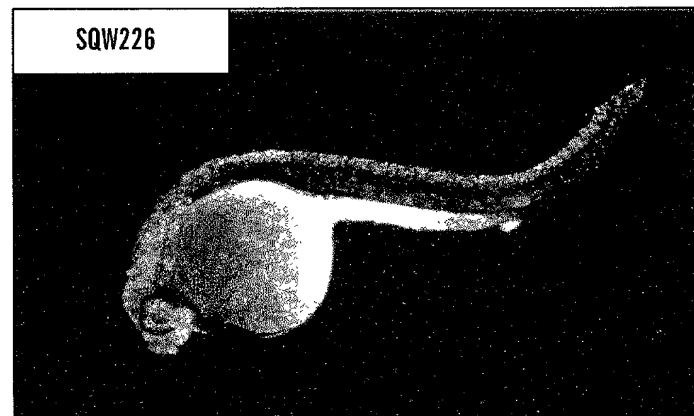


FIG. 21E

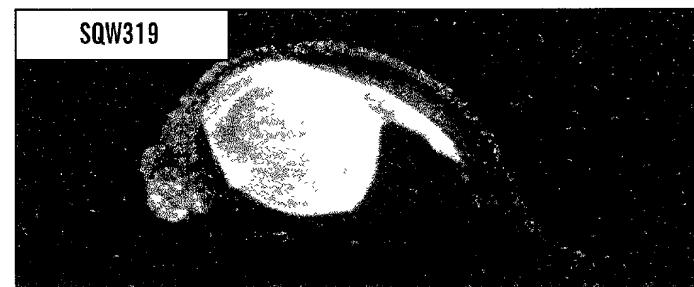


FIG. 21F